



Integrating the “3 Rs”: Remediation, Restoration and Redevelopment

THE MILLTOWN RESERVOIR SEDIMENTS SITE AND MISSOULA COUNTY, MONTANA

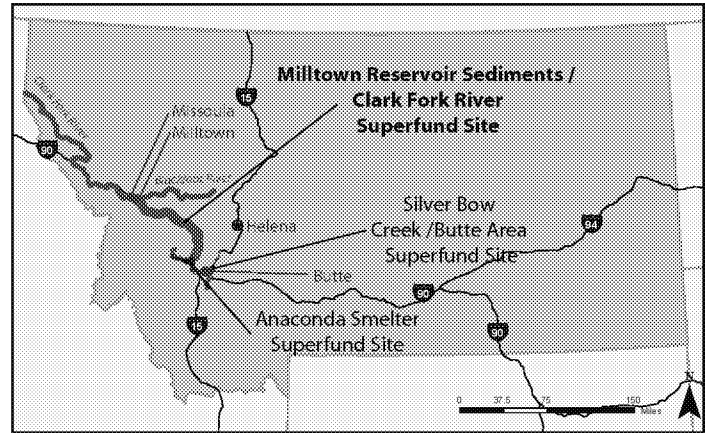
Introduction

A new chapter is beginning in the storied history of the Clark Fork and Blackfoot Rivers in western Montana. Home to the ancestors of the Bitterroot Salish, Pend d'Oreille and Kootenai tribes, the region's remarkable fishery and other natural resources have sustained communities for generations. From the 1860s until the late twentieth century, the area was also part of one of the richest mining regions in the world. These operations generated mining and milling wastes that in turn have led to one of the largest hazardous waste cleanups in the country.

Since the late 1990s, Missoula County and the communities of Milltown, West Riverside, Pine Grove, Bonner, Missoula and Piltzville have worked together to plan the future of the Two Rivers Area. Coordinating closely with local, state, tribal and federal partners, Missoula County recognized that redevelopment planning could be integrated with the environmental remediation of the Milltown Reservoir Sediments site and the ecological restoration of the Clark Fork River, which included the removal of the historic, century-old Milltown Dam.

Beginning in 2002, Missoula County worked with the U.S. Environmental Protection Agency (EPA) and federal, state and tribal partners on a coordinated approach that linked remediation, restoration and redevelopment, with a protective remedy and land revitalization as overarching goals. Assisted by an EPA Superfund Redevelopment pilot grant and EPA funding, the county formed the Milltown Superfund Site Redevelopment Working Group and developed the *Draft Conceptual Redevelopment Plan*. First completed in 2005 and updated in 2008, the *Plan* calls for the creation of a state park with trails, river access, wildlife habitat and interpretive areas celebrating the region's history and heritage.

The confluence of the Clark Fork and Blackfoot Rivers now flows freely for the first time in a century. More than three million tons of contaminated sediments have been removed and the restoration of the Clark Fork River's channel and floodplain will be completed by 2012. And in 2010, 415 acres at the site were transferred to the State of Montana for a new state park. Interim redevelopment activities, including several trails and



The Milltown Reservoir Sediments site is located in western Montana and is part of a larger regional cleanup effort addressing much of the Clark Fork River watershed.

a new pedestrian bridge, have been completed. More than \$3 million in grant funding has been allocated for the park's development, on top of about \$5 million already allocated for land acquisitions and adjoining trails and the pedestrian bridge.

This case study explores the key partnerships and effective tools that have led to the successful remediation, restoration and reuse of the Milltown Reservoir Sediments site. In particular, the case study examines how EPA and state agencies used outreach and coordination to support the site's remediation and restoration and how local communities leveraged partnerships and resources to help make the state park a reality.

In the following pages, the case study discusses the evolution of remediation, restoration and redevelopment efforts at the site between local planning efforts and coordination with EPA and state agencies in the early 2000s and ongoing reuse activities in 2011. This case study is intended to provide relevant information and lessons learned for parties interested in Superfund site reuse, river restoration and recreational and ecological land revitalization.



The Milltown Reservoir Sediments site is the location of the nation's largest river cleanup and restoration effort.

Site History, Contamination and Remediation

From the 1860s until well into the twentieth century, mineral- and arsenic-laden waste from mining activities in the region flowed into the headwaters of the Clark Fork River. The river, a renowned trout fishery, was located in one of the richest mining areas in the world.

As contaminated sediments and mine-mill wastes moved downstream, many of these sediments accumulated behind the Milltown Dam near Milltown, Montana, polluting the local drinking water aquifer and threatening the health of local ecosystems. Completed in 1908, approximately 6.6 million cubic yards of contaminated sediments accumulated behind the dam over time.

Following initial environmental investigations, EPA listed the site on the National Priorities List (NPL) in September 1983. The Milltown Reservoir / Clark Fork River Superfund site is divided into three parts, or operable units: Clark Fork River, Milltown Water Supply and Milltown Reservoir Sediments, which is the focus of this case study. In turn, the site is part of a larger regional effort addressing much of the Clark Fork River's watershed, including the Warm Springs Ponds, Anaconda Smelter and Butte/Silver Bow Creek Superfund sites, which together comprise one of the largest toxic waste cleanups in the country.

EPA selected a remedy for the Milltown Reservoir Sediments site in its 2004 Record of Decision. Components of the remedy include:

- Construction of a bypass channel at the reservoir.
- Removal of contaminated sediment in the reservoir (2.2 million cubic yards).
- Off-site disposal and use of the contaminated sediments as vegetative capping media.
- Removal of the Milltown Dam.
- Continuation of a replacement water supply program and implementation of temporary ground water controls until the Milltown aquifer recovers.
- Long-term monitoring of surface water and ground water.

EPA worked with the State of Montana from the outset to coordinate the site's remedy with the state's restoration plan for the area. The state's plan, developed in conjunction with the U.S. Fish and Wildlife Service, the Confederated Salish and Kootenai Tribes, and site trustees, is designed to restore the confluence of the Clark Fork and Blackfoot Rivers near the Milltown Dam to a naturally functioning, stable system. Other coordination activities led to the removal of the Stimson Dam (located on the Blackfoot River) and additional state restoration actions to provide additional habitat and stream bank improvements.

Throughout all planning and cleanup activities, EPA and state staff meet regularly with community stakeholders to share information and updates and to incorporate community feedback into the Superfund process. For example, EPA participates in the meetings of the Milltown Superfund Redevelopment Working Group and works closely with the Clark Fork River Technical Assistance Committee. The incorporation of restoration and future land use considerations as part of the remedial investigation and remedy selection process has enabled the community to plan for the reuse of the area in and around the site as a state park. Implementation of the site's remedy began in 2006 and the final remedial component – the reclamation of the Clark Fork River bypass channel following the restoration of the Clark Fork River channel and floodplain – will be in place in 2011.



The largest flood on record for the upper Clark Fork drainage occurred in 1908, transporting large quantities of contaminated sediments and mine-mill wastes to the recently constructed Milltown reservoir.

Project History

2002 – 2005

Building Relationships, Developing an Integrated Approach

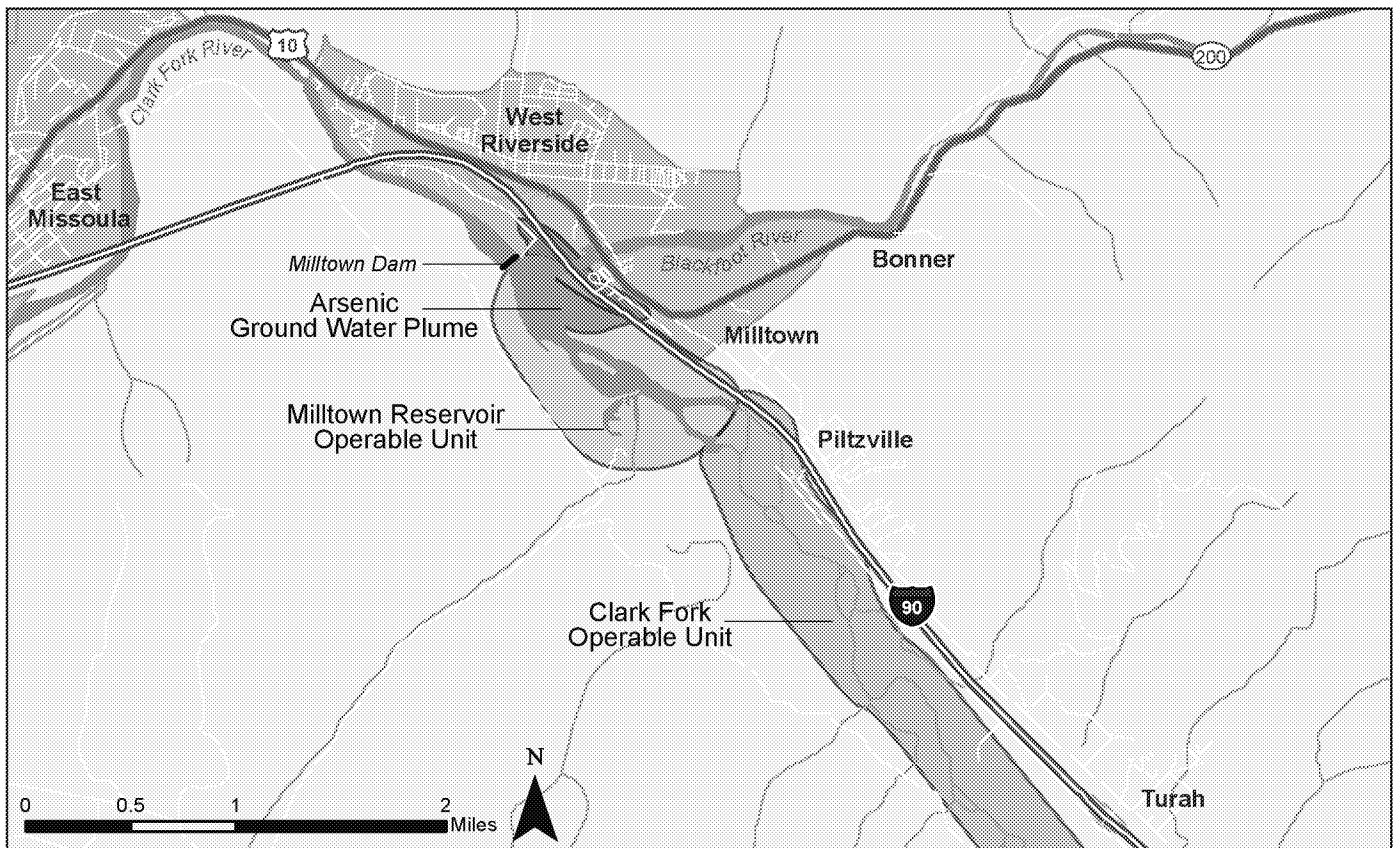
For local communities, there was no doubt that the cleanup and restoration of the Clark Fork and Blackfoot Rivers would bring significant change to the Two Rivers Area. “People could see possibilities and challenges, as well as a good deal of uncertainty,” recalled Peter Nielsen, Environmental Health Supervisor for Missoula City-County’s Health Department. “Many had assumed that the dam would be there forever. The idea that the whole area could be turned into an asset, rather than just causing problems, was remarkably powerful. At the same time, people also wanted to make sure that local history was recognized and respected.”

During this time, EPA was conducting studies and working with the State of Montana, the Confederated Salish and Kootenai Tribes, and the U.S. Fish and Wildlife Service to negotiate the site’s Consent Decree with the Atlantic Richfield Company (ARCO) and NorthWestern Corporation, the site’s responsible parties. The Consent Decree would be the significant legal agreement guiding remediation and restoration activities at the site.

“We couldn’t think about Superfund remediation without thinking about river restoration, and vice versa,” said EPA Project Manager Diana Hammer. “And we couldn’t think about cleanup or restoration without asking, ‘for what purpose?’ and ‘what happens next?’ Bringing together remediation, restoration and redevelopment was on everyone’s minds from the outset, and that integrated approach has been vital to the entire project.”

Listening and outreach formed the cornerstones of the working relationships. EPA staff spent time in the communities, asking residents about their long-term priorities for the area, set up information kiosks, provided bi-weekly update fact sheets, provided regular site tours and open houses, and met with area organizations like the Clark Fork Coalition and Friends of Two Rivers. EPA also continued to provide grant resources to a local organization, the Clark Fork River Technical Assistance Committee (CFRTAC), to provide independent technical assistance regarding the site’s cleanup.

EPA also reached out to three key state agencies. The Montana Department of Environmental Quality (MT DEQ) would be the state’s lead agency for remediation activities. The Montana



Detailed site map.

Department of Justice and its Natural Resource Damage Program (MT NRDP) would be responsible for restoration planning. Finally, Montana Fish, Wildlife and Parks would be responsible for any potential state-managed uses of the area following restoration. Project managers from each of the state agencies indicate that coordination among federal, state and local partners was vitally important. "Working with EPA, state agencies and local stakeholders has been an integral part of the project," recalled MT DEQ Project Officer Keith Large.

Working Group Vision Statement

We envision the Milltown/Bonner area as a healthy, participatory, growing community of individuals and families of diverse age, background and income, who want to make their home here. We are focused on quality education, maintenance of local heritage, conservation of the natural setting, opportunities for recreation and sense of community. Formal and informal community gathering places encourage ongoing research and education and maintenance of local history and culture.

To formalize EPA's commitment to evaluating future land use considerations as an integral part of the area's remediation and restoration, the Agency awarded a Superfund Redevelopment pilot project to Missoula County in late 2002. The pilot project led to the creation of the Milltown Superfund Redevelopment Working Group in 2003.

"The Working Group provided a way for everyone in the community to come together," recalled Working Group member Judy Matson. "Having a facilitated process meant that we could identify our shared goals and objectives to guide our community discussions."

The 22-member Working Group formed subcommittees focused on infrastructure, land use, community governance, parks, rivers, trails and recreation, and local history and heritage preservation. Over eighteen months, the Working Group conducted a detailed assessment of community priorities, hosting two public meetings. The project enabled area communities to identify future land uses that would address community priorities and fit appropriately with the site's remedy. The resulting *Conceptual Development Plan*, published in February 2005, outlined opportunities for historic preservation, heritage tourism, environmental education and recreation.

Timeline of Events

<i>1864 – 1970s:</i>	Releases of mining and milling wastes ongoing in the Clark Fork River basin	<i>Apr. 2005:</i>	State of Montana issues Restoration Plan for the Clark Fork and Blackfoot rivers
<i>1884:</i>	Stimson Dam first built, rebuilt in 1885	<i>Aug. 2005:</i>	Consent Decree signed; Northwestern Corporation agrees to transfer 415-acre area to the State of Montana
<i>1908:</i>	Milltown Dam constructed	<i>Nov. 2005:</i>	Stimson Dam removal completed
<i>1908:</i>	Largest flood on record for Clark Fork River; contaminants transported downstream to Milltown reservoir	<i>Fall 2006:</i>	Remedial activities underway
<i>1980s:</i>	Mining in Butte and Anaconda ceases and environmental investigations begin	<i>Oct. 2007:</i>	First trainload of contaminated sediments transported off site
<i>Sept. 1983:</i>	Site is the first area in Montana listed on EPA's NPL of top-priority sites	<i>2008:</i>	Restoration activities underway
<i>1984:</i>	Response Action installed a new drinking water system for Milltown	<i>Jul. 2008:</i>	Updated Conceptual Design Plan for site's redevelopment presented to local officials
<i>1986:</i>	Spillway and dam rehabilitation	<i>Nov. 2008:</i>	Missoula County completes new recreational trail and pedestrian bridge over the Blackfoot River
<i>1990s - 2000s:</i>	Remediation investigations and studies	<i>Sept. 2009:</i>	Last trainload of contaminated sediments leaves the site
<i>2002:</i>	EPA Superfund Redevelopment Initiative pilot project funding provided for the site	<i>Jan. 2010:</i>	Milltown Dam removal completed
<i>2003:</i>	Milltown Superfund Redevelopment Working Group formed	<i>Dec. 2010:</i>	Site properties transferred to State of Montana to establish state park; Clark Fork River returned to restored channel and floodplain
<i>Dec. 2004:</i>	EPA issues Record of Decision for the site	<i>2011:</i>	Construction of site remedy completed
<i>Feb. 2005:</i>	Draft Conceptual Redevelopment Plan for site presented to local officials		



Aerial view of remediation and restoration activities at the site, 2009.

The 2005 *Plan* outlined a general reuse framework that could be adapted over time and included restoring the Milltown Reservoir Sediments site as a natural area, public park and living museum as cleanup and restoration plans were finalized. “There were lots of different views, and disagreements that needed to be addressed along the way,” recalled Working Group member Judy Matson, “but we all wanted to ensure that the area remained a livable, affordable community that was welcoming to all walks of life. We found from the beginning that everyone agreed on the big picture.”

The *Plan* proposed that 415 acres of land owned by the NorthWestern Corporation, a responsible party, serve as the location for a new state park. Several years in the making, successful negotiations by the State of Montana with the NorthWestern Corporation led to agreement as part of the site’s 2005 Consent Decree that the company would give its property to the state and pay \$1.4 million toward the state’s Natural Resource Damage claim for restoring injured natural resources across the Upper Clark Fork River Basin.

The Working Group’s *Plan* was also able to inform remedial and restoration planning. The site’s Consent Decree, for example, included a \$100,000 appropriation for historic preservation activities, established local authority to request historic items from dismantled site structures, and recognized that the State of Montana and area communities sought to create a new state park around the Milltown Reservoir.

Remedial and restoration planning also informed Working Group discussions as well as broader community sentiment.

Local support for dam removal grew, for example, as people explored longer-term outcomes and discussed potential safety issues and environmental impacts associated with dam retention. “People saw the possibility of restoring a free-flowing river, the fishery and area ground water, and providing a remarkable recreational resource,” recalled EPA’s Diana Hammer. When EPA selected the site’s remedy in its December 2004 Record of Decision, the approximately 15,000 community comments received during public comment periods overwhelmingly supported the proposed remedy.

By 2005, the project’s partnerships and integrated 3-R – remediation, restoration and redevelopment – approach were well-established. Through its Natural Resource Damage Fund, the State of Montana had allocated almost \$18 million dollars to fund restoration activities (\$14.3 million) and redevelopment-related infrastructure (\$3.6 million). Locally, voters approved the creation of the Bonner Milltown Community Council advisory body in 2006 to provide county-level representation for the unincorporated Two Rivers Area communities; the Council worked increasingly with the Working Group over time. Now, it was time for next steps: developing and implementing detailed plans for the site’s remediation, restoration and redevelopment. Over the next three years, EPA would work with state agencies and local communities to turn the clock back more than a century, restoring the Clark Fork River’s channel and floodplain to conditions similar to those prior to the construction of the Milltown Dam in 1908.

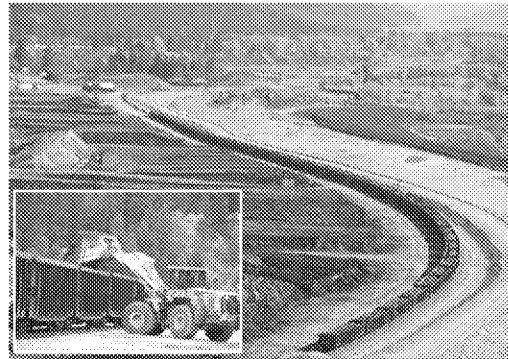
2006 – 2011

Making it Happen: Moving into Remediation, Restoration and Redevelopment

Between 2006 and 2011, one of the nation's largest river cleanup and restoration efforts moved forward. Given the scale and scope of these efforts, key remediation, restoration and redevelopment activities are described briefly below and then presented visually on the following pages.

REMEDIATION

- A bypass channel on the Clark Fork River is constructed. A railroad spur is built to allow loading of sediments. Haul roads are built to enable access to contaminated sediments.
- The Milltown Reservoir is drained and the Clark Fork River is diverted into the bypass channel.
- The Milltown Dam, powerhouse and spillway are removed.
- Over three million tons (2.2 million cubic yards) of contaminated sediments are excavated. Trainloads of the sediments are transported to a waste repository at the Anaconda Smelter Superfund site. The transported sediments are seeded, serving as a vegetated cap for 800 of the repository's 4,000 acres.
- Temporary ground water controls put in place until the Milltown aquifer recovers, which is expected within a decade. Surface water and ground water will be monitored over long term.



RESTORATION

- The Stimson Dam is removed prior to remediation activities (2005).
- A new channel, streambanks and floodplain for the Clark Fork River are constructed and stabilized.
- The river channel is designed to support high-quality habitat.
- Streambanks and the floodplain are revegetated using diverse native plant communities.
- Conditions for wetlands and side channels are created where feasible, providing wildlife habitat.
- The Clark Fork River is diverted into its new channel; the bypass channel is backfilled and regraded.



REDEVELOPMENT

- Black Bridge, dedicated in November 2008, is designed to look like the historic Old Highway 200 Bridge it replaced. The removal of the old bridge's concrete piers also facilitates river restoration efforts.
- The Piltzville Trail, the first of many new trails envisioned for the area, is opened in 2007.
- The Confluence Area is envisioned as a recreation area that recognizes the area's natural beauty, with panoramic views from a plaza and pavilion, trails and a picnic area, and fishing access.
- The Milltown Gateway is envisioned as a recreation area that celebrates community history, with trails, a picnic area, education stations, a playground and fishing access.
- The Clark Fork Floodplain is envisioned as a natural area, with a bluff overlook and opportunities for wildlife watching and passive recreation.



REMEDIATION

Thanks to the detailed costs, responsibilities and scope of work outlined in the site's 2005 Consent Decree, the project's Remedial Design Team was able to develop remediation plans rapidly and smoothly, working in concert with a Design Review Team with representatives from state and federal agencies, the Confederated Salish and Kootenai Tribes, and community organizations including CFRTAC,

the Milltown Superfund Redevelopment Working Group and the Bonner Milltown Community Council. "Restoration and redevelopment considerations were with us throughout the design and implementation of the site's remedy," recalled EPA's Diana Hammer. "That coordination led to significant time savings and reduced cleanup costs and the amount of materials that were required."





Project Goals: Restoration

- Maintain water quality.
- Create a channel appropriate for the valley setting that transports sediment and is connected to its floodplain.
- Provide habitat for fish and wildlife.
- Establish functional wetlands and riparian (streamside) plant communities.
- Provide visual and aesthetic values consistent with a natural condition.
- Offer safe recreational opportunities compatible with the above goals.

- 1 MONTANA RAIL LINK BRIDGE
- 2 I-90 BRIDGES
- 3 MAIN CHANNEL
- 4 SIDE CHANNELS
- 5 WETLANDS & PLANTING SWALES
- 6 BANK STABILIZATION STRUCTURES
- 7 NATURAL REGROWTH AREA
- 8 OLD CLARK FORK CHANNEL & IIR SEDIMENT AREA
- 9 TUNNEL POND REPOSITORY
- 10 FORMER MILLTOWN DAM SITE
- 11 CONFLUENCE AREA / STATE PARK LAND
- 12 BLUFF STATE PARK LAND

RESTORATION

The project's overall restoration goal is to "restore the confluence of the Blackfoot and Clark Fork Rivers to a naturally functioning, stable system." Led by Montana's Natural Resource Damage Program, the project's 2005 Restoration Plan relies on features – diverse native plant communities, side channels and wetlands – that mimic natural river systems. "The river's restoration is a long-

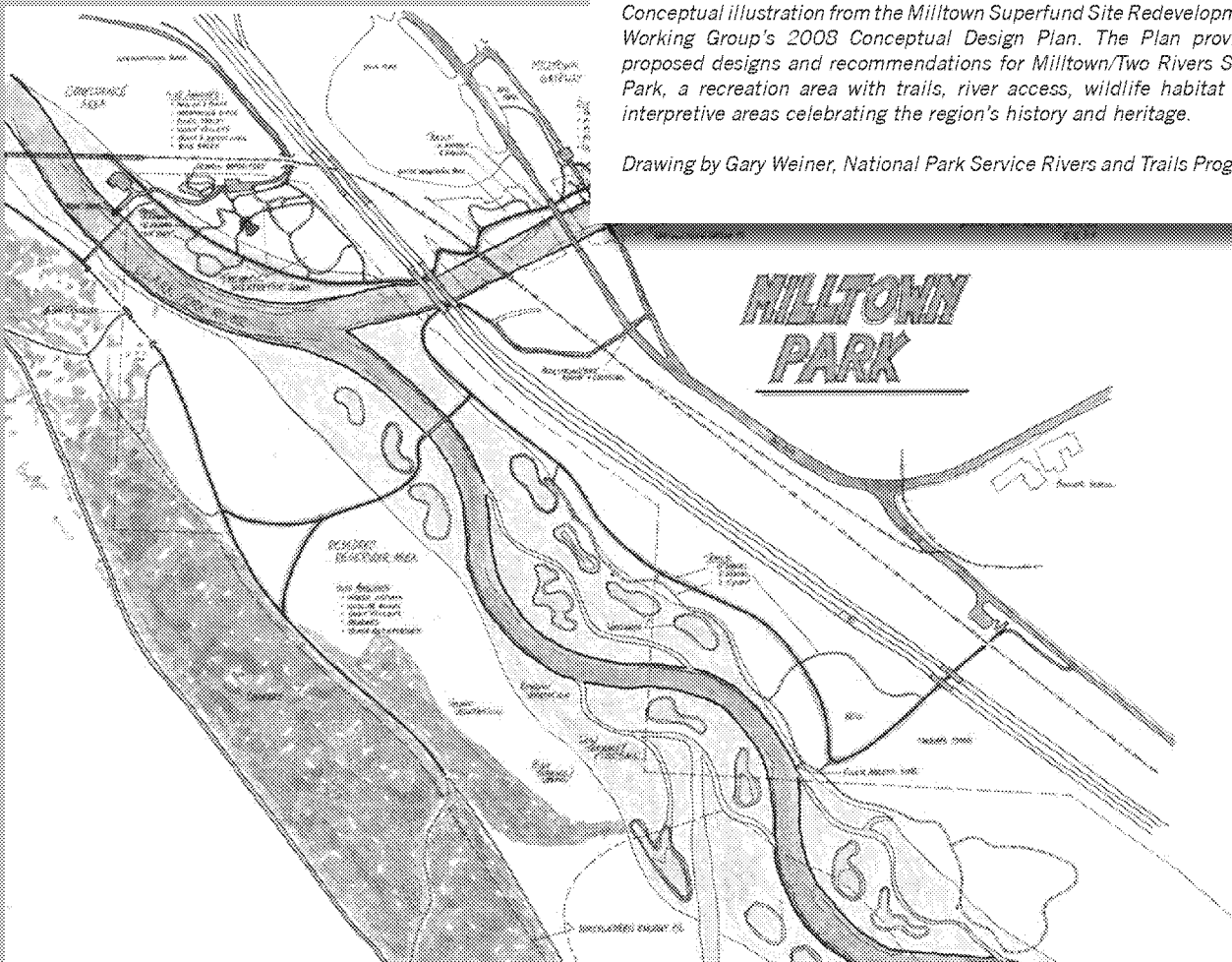
term process," said MT NRDP Restoration Project Manager Doug Martin. "At first, the river channel and stabilization structures put in place will help control erosion and enable native vegetation to become established on the floodplain. Over time, plant and tree communities will become well-established, and those structures will decompose or become buried, enabling the river to meander across its floodplain."

REDEVELOPMENT

In 2007, the Milltown Superfund Redevelopment Working Group updated its 2005 Plan. Working with partners including Missoula County, the National Park Service's Rivers and Trails Program, the Idaho-Montana Chapter of the American Society of Landscape Architects, and state and federal agencies, the Working Group hosted a two-day charrette, or design workshop. "The goal was to take the concept plan to the next level and develop designs for key focal areas in sufficient detail to allow for cost estimates," said CFRTAC Coordinator and Working Group member Michael Kustudia. "We were really fortunate to be able to work with the National Park Service and our other partners on this. The charrette was really effective in helping us move from conceptual ideas to concrete details and implementation planning." The workshop resulted in the Working Group's 2008 Conceptual Design Plan.

Today, Montana Fish, Wildlife and Parks' planning process for the Milltown/Two Rivers State Park is underway, informed by the community's 2008 Plan. Land (415 acres) for the new park was transferred to the State of Montana in December 2010. Additional proposed future acquisitions would bring the park to more than 700 acres. \$2.7 million in funding has been allocated for the park's creation, with an additional five-year grant planned for the park's operation and maintenance. It is anticipated that the park will open to the public in 2012.

"It's going to take a few years to get everything in place. Construction of park facilities is scheduled to begin in 2011," said Montana Fish, Wildlife and Parks Regional Park Manager Lee Bastian. "This is a really exciting project. The extent of community visioning and planning is especially remarkable, there has been so much partnership and discussion that has gone on. And now there is such energy and excitement in support of the state park."



Conceptual illustration from the Milltown Superfund Site Redevelopment Working Group's 2008 Conceptual Design Plan. The Plan provides proposed designs and recommendations for Milltown/Two Rivers State Park, a recreation area with trails, river access, wildlife habitat and interpretive areas celebrating the region's history and heritage.

Drawing by Gary Weiner, National Park Service Rivers and Trails Program

Lessons Learned

Participants agree that a combination of significant factors have contributed to the successful effort to integrate remediation, restoration and redevelopment at the Milltown River Sediments site.

- The confluence of the Clark Fork and Blackfoot Rivers is a remarkable natural and historic resource that generated significant community interest and engagement in project activities.
- Missoula County and local communities energetically pursued the site's cleanup and redevelopment over the long-term to put in place the requisite resources, partnerships and infrastructure. Working with the Missoula Board of County Commissioners, state agencies and state and federal elected officials and EPA, the Milltown Superfund Redevelopment Working Group has guided the site's redevelopment.
- EPA, MT DEQ, MT NRDP and Montana Fish, Wildlife and Parks were engaged partners who understood the community's redevelopment priorities in the context of the site's cleanup and restoration, enabling the development of decision documents that reflected remedy, restoration and redevelopment considerations.
- The State of Montana's leadership led to successful negotiations with the Northwestern Corporation to transfer 415 acres of its property for the location of the Milltown/Two Rivers State Park. The state also provided almost \$18 million in funding from its Natural Resources Damage Program for the site's integrated restoration and redevelopment activities.
- EPA and state agencies provided timely reuse planning assistance and supported significant community outreach and education activities throughout the process.
- The development of a Consent Decree that provided detailed roles, responsibilities, costs and timeframes for the site's cleanup and restoration provided a clear road map for all parties to work together.
- All parties involved were patient and flexible, recognizing that site cleanup, river restoration and redevelopment planning was a complex process reliant on seasonal conditions, available resources, multiple parties and other factors.
- EPA selected a remedy that would be consistent with the area's reasonably anticipated future land uses.



MOVING PARTS: COORDINATION OF THE "3 Rs"

- Clean dirt excavated during remediation was stockpiled in easily accessible areas for use in restoration work like the establishment of new stream banks.
- Restoration planning guided design and location of trails to ensure the protection of sensitive habitat.
- Reuse planning identified locations for fishing and boating access, informing floodplain grading and design.
- Haul roads were designed to be easily reduced in size following remediation to serve as trails.
- Historic mill equipment was removed prior to demolition and will be part of educational exhibits at the new state park.
- Restoration features like earthen berms were designed for double duty, to also serve as wildlife viewing areas.
- Some reuses will be designed later and phased in over time, as the rivers adjust to their surroundings.

The Bigger Picture

While these factors created an ideal climate for the successful reuse of the Milltown Reservoir Sediments site, there are also a range of broader lessons learned that can help guide similar projects at contaminated lands across the country.

The project's integrated 3-R – remediation, restoration and redevelopment – approach can be applied at contaminated lands nationwide.

Community members and organizations in the Two Rivers Area developed compelling big-picture goals and worked with state agencies and EPA to enable the coordinated cleanup of contamination, the restoration of the Clark Fork River, and the development of a regional recreational resource. Long-term planning, partnership building and strong working relationships can enable similar outcomes at small sites as well as larger-scale cleanups.

Development of detailed agreements outlining project roles and responsibilities enables effective working relationships and timely completion of project milestones.

The site's 2005 Consent Decree provided the road map for the cleanup and restoration of the Clark Fork River. "It was ultimately EPA's cooperation and willingness to allow restoration to be integrated with the remediation at the site that really made [the agreement] work," recalled MT NRDP Restoration Project Manager Doug Martin. "It took three-and-a-half years to negotiate the Consent Decree, and it was time well spent," said EPA Project Manager Diana Hammer. "The agreement explained clearly which parties were responsible for which parts of the cleanup, it explained parties' cost-share responsibilities, and outlined a detailed scope of work. Having the agreement in place made the process of designing and implementing the remedy much more straightforward."

While EPA provides tools and resources to support Superfund reuse, communities and public and private sector organizations make it happen.

EPA's mission is to protect human health and the environment. EPA relies on engaged community stakeholders to bring their future land use goals and priorities to the table so that this information can be incorporated as part of the remedial process, linking cleanup, restoration and redevelopment. In Missoula County, the creation of the Milltown Superfund Redevelopment Working Group ensured that EPA and state agencies could incorporate the feedback of diverse site stakeholders into the cleanup and restoration of the Milltown Reservoir Sediments site.

EPA and Site Reuse: Lessons Learned

Since the inception of the Superfund program, EPA has been building on its expertise in conducting site characterization and remediation to ensure that contamination is not a barrier to the reuse of property. Today, consideration of future use is an integral part of EPA's cleanup programs from initial site investigations and remedy selection through to the design, implementation, and operation and maintenance of a site's remedy.

"At older sites, EPA did not focus on taking reuse considerations into account early in the cleanup process," reflected EPA Region 5's Matthew Mankowski, a former project manager at Superfund sites. "Today, that has changed. Superfund cleanups can be very creative and flexible in allowing for future site uses, but that information needs to be plugged in early to be as effective as possible."

At the Milltown Reservoir Sediments site, future land use considerations were able to inform EPA Region 8's selection of the site's remedy and the State of Montana's river restoration planning, which enabled the site's reuse as a state park, and the phased remediation, restoration and redevelopment of the area meant that the local communities, EPA, state agencies and other parties could coordinate plans and activities over time.

Thanks to lessons learned at Superfund sites like the Milltown Reservoir Sediments site, EPA has developed additional tools to ensure an integrated approach to the cleanup and redevelopment of contaminated lands. For example, EPA has developed a partial deletions guidance. Partial deletions allow EPA to remove the cleaned and uncontaminated portions of a Superfund site from the NPL, expediting the reuse of those properties.

Second, EPA works with site stakeholders to consider how future land use considerations can inform the implementation and long-term stewardship of site remedies as well as cleanup planning. At some sites, for example, reuse considerations can inform the future location of ground water monitoring wells and other operation and maintenance equipment that might inadvertently hinder redevelopment efforts. At other sites, detailed site reuse plans have provided additional benefits that save time and reduce redevelopment costs. For example, future infrastructure corridors or building footers can be installed in coordination with site cleanup activities. At the Milltown Reservoir Sediments site, EPA was able to store excavated dirt in accessible locations for river restoration and design haul roads so that they could be converted into trails following remediation.

State agencies can play a vital role across remediation, restoration and redevelopment activities at contaminated lands and provide critical resources and expertise.

MT DEQ, MT NRDP, and Montana Fish, Wildlife and Parks have each played lead roles in the project's integrated 3-R approach, while the state's Natural Resource Damages program has provided almost \$18 million in funding for restoration actions and the development of features associated with the area's redevelopment.

"We started out committing to six meetings and now it has been six years. It has definitely been worth it. The project's results have turned out to be much bigger than we ever dreamed they would be. Working with EPA and our state government to clean up our drinking water and restore a beautiful, naturally functioning river, it's a pretty amazing outcome."

- Judy Matson, Milltown Superfund
Redevelopment Working Group

As the organizations responsible for their communities' general welfare, local governments are well-positioned to host reuse projects, bring together diverse stakeholders to discuss site reuse opportunities, and use planning tools and resources to foster positive site outcomes.

In Missoula County, the sustained support of the County Commissioners and the creation of the Bonner Milltown Community Council advisory body raised the project's profile, enabled local government staff to work on the project, and led to the eventual award of more than \$3 million in grant resources for the Milltown/Two Rivers State Park.

The diverse stakeholders at contaminated lands often have shared interests underlying sometimes contentious, opposing positions, which can lead to unexpected partnerships and innovative reuse plans.

At the outset of the project, there were significant community divisions and considerable concern regarding the site's cleanup and long-term impacts. Facilitated Working Group meetings, sustained community outreach by EPA and state agencies, and coordination with area organizations including the Clark Fork Coalition and Friends of Two Rivers led to a striking outcome. Regardless of whether the Milltown Dam would be removed or not, a community consensus emerged

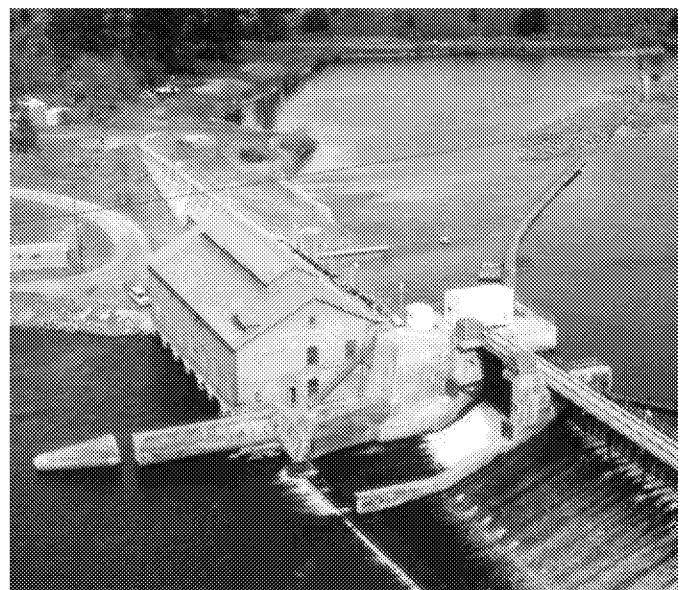
that the former reservoir area should remain a public resource, with public access for uses like fishing and boating maintained in perpetuity. This consensus served as the foundation for subsequent community reuse planning activities.

Responsible parties and site owners are important stakeholders who can contribute to restoration and reuse planning activities as well as site cleanup discussions.

In Missoula County, ARCO's interest in improved community relations and mitigating its long-term obligations at the site meant that the responsible party was willing to fund restoration activities, including the removal of all dam structures and the reconstruction of the Clark Fork River floodplain, as part of its responsibilities at the site. In return, the State of Montana assumed responsibility for the long-term revegetation of the site.

Environmental restoration and recreational reuse represent an economic development opportunity in addition to providing social and ecological benefits.

As documented in the 2009 Trust for Public Land report *Conservation: An Investment That Pays*, parks and open space boost land values and property taxes, attract businesses and residents, generate tourist revenues and provide reduced costs for environmental services. Missoula City-County Environmental Health Supervisor Peter Nielsen recalled that local government, residents, and area businesses and organizations in Missoula County increasingly saw the creation of Milltown/Two Rivers State Park as making long-term economic sense. "This kind of asset is something that makes the area a special place," he said. "It gives us a different future, helps make the area a place where people want to visit and live and work. That's a real economic driver for us."



The Milltown Dam, powerhouse and spillway prior to removal.

Conclusions: 2011+

Transitioning to New Roles, Returning to Historic Paths

In 2009, the last trainload of contaminated sediment left the Milltown Reservoir Sediments site. On December 16, 2010, the Clark Fork River returned to its restored channel and floodplain. The site's remediation and restoration are largely complete and interim reuses are already in place.

With so much accomplished over the past decade, the local communities, state agencies and EPA are now working together to transition into new roles and responsibilities. "EPA will remain responsible for monitoring and ensuring the protectiveness of the site's remedy," said Project Manager Diana Hammer. "At the same time, it feels like we're handing off the baton to the local communities and the State of Montana for most of what happens next."

The communities and Montana Fish, Wildlife and Parks are ready. With more than \$3 million in grant resources already allocated for the Milltown/Two Rivers State Park, Montana Fish, Wildlife and Parks will soon transition from park planning to construction and operation of Montana's newest state park. The Milltown Superfund Redevelopment Working Group is transitioning into a non-profit organization dedicated to assisting with the park's development. Montana Fish, Wildlife and Parks anticipates that construction of park facilities will begin in 2011, with portions of the park open to the public by 2012, according to Regional Parks Manager Lee Bastian.

"It is both something new and a return," said CFRTAC Coordinator and Working Group member Michael Kustudia. "The state park will help welcome a new chapter in the community's history, while at the same time the river is returning to its original path." Indeed, reminders of the community's past can be found across the former reservoir area, where the stumps of old trees dating back to the early 1800s were uncovered during remediation.

Even Mother Nature is lending a helping hand. During restoration, natural re-growth – an unusual assemblage of native vegetation – was spotted in these areas. Botanists think that some of these plants may be growing from native seed that had been buried for 100 years under reservoir sediment. In ways large and small, years of shared hard work are paying off, creating unexpected benefits as well as carefully planned outcomes.

Sources and Resources

Sources

Images and maps for this case study were obtained from EPA Region 8, the Milltown Superfund Redevelopment Working Group, CFRTAC and the Jack Demmons Collection at the University of Montana.

Resources

EPA site profile:

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EPA Region 8 Superfund Program and project Web page:

www.epa.gov/region8/superfund and www.epa.gov/region8/superfund/mt/milltown

EPA Superfund Redevelopment Initiative:

www.epa.gov/superfund/programs/recycle

Missoula County and Milltown Superfund Redevelopment Working Group:

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The Clark Fork River Technical Assistance Committee (CFRTAC):

www.cfrtac.com

Friends of Two Rivers:

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Clark Fork Coalition:

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Integrating the “3 Rs”: Remediation, Restoration and Redevelopment

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